Amendments to the Claims

1. (Currently Amended) A magnetic recording medium comprising:

a substrate;

a non-magnetic spacer material on the substrate; ~~and~~

a soft magnetic underlayer on the non-magnetic spacer material, the soft magnetic underlayer containing iron, cobalt and boron; and

a perpendicular recording layer on said soft magnetic underlayer;

wherein said soft magnetic underlayer acts as a single magnetic domain exhibiting magnetic anisotropy in a plane parallel to the surface of the recording layer.

2. (Currently Amended) The magnetic recording medium as recited in claim 1, wherein the thickness of said non-magnetic spacer material is approximately ~~0-5~~ 1-5 nm. ~~thick.~~

3. (Currently Amended) The magnetic recording medium as recited in claim 1, wherein ~~the~~ said soft magnetic underlayer is approximately 240 nm thick.

4. (Currently Amended) The magnetic recording medium as recited in claim 3, wherein the soft magnetic underlayer is comprised of alternating layers of an iron-cobalt alloy and tantalum.

5. (Currently Amended) The magnetic recording medium as recited in claim 4, wherein ~~the SUL~~ said soft magnetic underlayer comprises ~~that~~ three iron-cobalt layers of about 80 nm ~~thick and~~ thickness interlaced with three tantalum layers ~~of~~ with a thickness less than or equal to 5 ~~about 0-5~~ nm ~~thick~~..

6. (Currently Amended) The magnetic recording medium as recited in claim 4, wherein ~~the SUL~~ said soft magnetic underlayer comprises a first iron-cobalt layer of about 80 nm ~~thick~~ thickness and a second iron-cobalt layer of about 160 nm ~~thick~~ thickness having a tantalum layer with a thickness less than or equal to 5 of ~~about 0-5~~ nm ~~thick~~ therebetween.

7. (Currently Amended) The magnetic recording medium as recited in claim 1, wherein the soft magnetic underlayer is further comprised of one or more layers of a soft magnetic material composed of about 90 atomic percent iron-cobalt alloy and about 10 atomic percent of boron.

8. (Currently Amended) The magnetic recording medium as recited in ~~claim 4~~ claim 7, wherein the iron-cobalt alloy is further comprised of about 65 atomic percent iron and about 35 atomic percent cobalt.

9. (Currently Amended) The magnetic recording medium as recited in claim 1, wherein said soft magnetic underlayer further ~~comprising~~ comprises a plurality of alternating layers of non-magnetic spacer material and soft magnetic ~~underlayers~~ material.

10. (Original) The magnetic recording medium as recited in claim 1, further comprising a second non-magnetic spacer material on the soft magnetic underlayer.

11. (Cancelled)

12. (Original) The magnetic recording medium as recited in claim 6, further comprising a second non-magnetic spacer material on the soft magnetic underlayer.

13. (Original) The magnetic recording material as recited in claim 1, wherein the non-magnetic spacer material contains tantalum.

14. (Currently Amended) A method of manufacturing a perpendicular magnetic recording medium, the method comprising:

providing a substrate;

depositing a non-magnetic spacer material on the substrate;

depositing a soft magnetic underlayer ~~containing iron, cobalt and boron~~ on the non-magnetic spacer material; and

depositing a perpendicular magnetic recording material on the soft magnetic underlayer, wherein said soft magnetic underlayer acts as a single magnetic domain exhibiting magnetic anisotropy in a plane parallel to the surface of said recording material.

15. (Currently Amended) The method as recited in claim ~~11~~ 14, wherein the step of depositing the soft magnetic underlayer comprises depositing ~~a soft magnetic underlayer containing~~ one or more layers of a soft magnetic material comprising approximately 90 atomic percent iron-cobalt alloy and approximately 10 atomic percent boron.

16. (Currently Amended) The method as recited in claim ~~12~~ 15, wherein the step of depositing the soft magnetic underlayer further comprises depositing a soft magnetic underlayer having a iron-cobalt alloy containing approximately 65 atomic percent iron and approximately 35 atomic percent cobalt.

17. (Currently Amended) The method as recited in claim ~~11~~ 16, wherein ~~the step of depositing the soft magnetic underlayer includes depositing the soft magnetic underlayer~~ each of said

one or more layers of a soft magnetic material is deposited at a thickness ~~of~~ less than or equal to about 80 nm.

18. (Currently Amended) The method as recited in claim ~~13~~ 15, wherein the step of depositing the soft magnetic underlayer includes depositing ~~the soft magnetic underlayer at a thickness of about 80 nm~~ layers of a non-magnetic material between said one or more layers of said soft magnetic material.

19. (Currently Amended) The method as recited in claim ~~11~~ 14, wherein the step of depositing the non-magnetic spacer material comprises depositing a tantalum layer on the substrate.

20. (Currently Amended) The method as recited in claim ~~16~~ 19, wherein the tantalum layer is deposited at a thickness of about 1-5 nm.

21. (Currently Amended) The method as recited in claim ~~14~~ 18, wherein ~~the step of depositing the non-magnetic spacer material comprises depositing a tantalum layer on the substrate~~ layers of non-magnetic material are deposited at a thickness of about 1-5nm.

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Currently Amended) The method as recited in claim ~~11~~ 14, further comprising the step of depositing a second non-magnetic spacer material ~~on~~ between the soft magnetic underlayer

~~under~~ and the perpendicular recording medium.

26. (Cancelled)

27. (Currently Amended) The method as recited in claim ~~23~~ 14, further comprising the step of flash annealing the magnetic recording medium.

28. (Cancelled)

29. (New) The magnetic recording medium of claim 5 wherein said three iron-cobalt layers are ferromagnetically coupled.

30. (New) The magnetic recording medium of claim 6 wherein said first and said second iron-cobalt layers are ferromagnetically coupled.

31. (New) The method as recited in claim 27 wherein said step of flash annealing comprises flash annealing at a maximum temperature of 410°C for about 7 seconds.

32. (New) The magnetic recording medium as recited in claim 1 wherein said soft magnetic underlayer comprises a plurality of layers of soft magnetic material.

33. (New) The magnetic recording medium of claim 30 wherein each of said plurality of layers of soft magnetic material is less than or equal to about 80 nm in thickness.

34. (New) A circular magnetic recording medium suitable for use in a magnetic disk drive comprising:

a substrate;

a non-magnetic spacer material on the substrate;

a soft magnetic underlayer on the non-magnetic spacer material; and

a perpendicular recording layer on said soft magnetic underlayer;

wherein said soft magnetic underlayer has a magnetic easy axis which lies in the radial direction of said circular magnetic recording medium.

35. (New) The circular magnetic recording medium of claim 34 wherein said soft magnetic underlayer acts as a single magnetic domain.

36. (New) The circular magnetic recording medium of claim 35 wherein said soft magnetic underlayer exhibits magnetic anisotropy in a plane parallel to the surface of said recording medium.

37. (New) The circular recording medium of claim 34 wherein said soft magnetic underlayer comprises one or more layers of a soft magnetic material.

38. (New) The circular recording medium of claim 34 wherein said soft magnetic material is an alloy of iron, cobalt and boron.

39. (New) The circular recording medium of claim 38 wherein said alloy of iron, cobalt and boron comprises $(Fe_{65}Co_{35})_{90}B_{10}$.

40. (New) The circular recording medium of claim 38 further comprising one or more layers of a non-magnetic material interlaced with said one or more layers of said soft magnetic material.

41. (New) The circular recording medium of claim 40 wherein said one or more layers of non-magnetic material are composed of tantalum.

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42. (New) The circular recording medium of claim 34 further comprising a second non-magnetic spacer layer between said soft magnetic underlayer and said perpendicular recording layer.

43. (New) The circular recording medium of claim 34 wherein the hard magnetic axis of said soft magnetic underlayer is perpendicular to said radial direction of said circular magnetic recording medium.

44. (New) The circular recording medium of claim 42 wherein the saturation field in the direction of said hard axis of said soft magnetic underlayer is greater than or equal to about 40Oe.

Respectfully Submitted,

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